

## ABSTRACT

A miniaturized temperature-zone flow reactor, used for thermally controlled biochemical or molecular-biological processes, especially polymerase chain reaction (PCR) enables more efficient reactions by providing at least one closed flow path which is divided into three partial paths (A<sub>1</sub>...A<sub>n</sub>; B<sub>1</sub>...B<sub>n</sub> and BB<sub>1</sub>...BB<sub>n-1</sub>; C<sub>1</sub>...C<sub>n</sub>) with the reactor having three substrate chips (A; B; C) which are made of a material having a high heat conductivity, and which have defined channel sections that are spaced apart relative to each other, and are connected by a connecting chip (V) made of a poor heat-conductive material. The substrate chips (A; B; C) are maintained at different temperatures by various means, including the use of controlling heating elements in contact with the chips.